REMARKS

Applicants have withdrawn claims 58-78 as being directed to non-elected subject matter. The elected claims set forth, herein, are merely to comply with the Restriction Requirement and is not to be construed as surrender of any subject matter in the instant application. Applicants hereby reserve the right to pursue the subject matter of the canceled claims in one or more divisional patent applications.

Claim 1 has been cancelled. Claim 2 has been amended to include the subject matter of claim 1. Claim 2 was amended as per the Examiner's recommendation on page 6 of the instant Office Action. No new matter has been included in this amendment and its entry is respectfully requested.

Claims 1-78 are pending. Claims 19-34 and 51-57 are allowed. Claims 1, 4-18 and 35-50 are rejected.

Claim Rejections Under 35 U.S.C. § 102

Claims 1, 4-9, 12-13, 16-18, 35-40 and 43-50 are rejected under 35 U.S.C. § 102(a) and (e) as being anticipated by During et al.

Applicants respectfully traverse.

Applicants invention is directed in part to a non-naturally occurring nucleic acid comprising: (A) a first nucleotide sequence encoding at least one AAV Rep protein; and (B)a second nucleotide sequence encoding at least one AAV Cap protein, wherein the second nucleotide sequence comprises (i) a polynucleotide encoding a portion of a Cap protein found in an AAV of a first serotype **but not** in an AAV of a second serotype **differing from** the first serotype and (ii) a polynucleotide encoding a portion of a Cap protein found in the AAV of the second serotype, but not in the AAV of the first serotype; wherein the nucleic acid further comprises a first AAV TR and a second AAV

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TR, and the first and second nucleotide sequences are interposed between the first and the second AAV TRs.

Applicants further teach the construction of chimeric replication-competent (rcAAV) vectors encoding modified Cap proteins, virions containing chimeric rcAAV vectors, virions composed of chimeric capsids (e.g., capsids containing a degenerate, recombined, shuffled or otherwise modified Cap protein), chimeric rcAAV virions having cell- and tissue-specific tropisms, combinatorial vector and virion libraries, and AAV helper vectors encoding chimeric Cap proteins. Combinatorial libraries are generated using degenerate synthetic oligonucleotides that result in the incorporation of every polymorphism within the seven loops of the AAV capsid genes from serotypes 1 through 8. Using a combinatorial library of the invention, virions with cell- and tissue-specific tropisms can be selected.

During *et al.*, fails to teach or anticipate a first nucleotide sequence encoding at least one AAV Rep protein; and a second nucleotide sequence encoding at least one AAV Cap protein, wherein the second nucleotide sequence comprises (i) a polynucleotide encoding a portion of a Cap protein found in an AAV of a first serotype **but not** in an AAV of a second serotype **differing from** the first serotype and (ii) a polynucleotide encoding a portion of a Cap protein found in the AAV of the second serotype, **but not** in the AAV of the first serotype; wherein the nucleic acid further comprises a first AAV TR and a second AAV TR, and the first and second nucleotide sequences are interposed between the first and the second AAV TRs. Furthermore, During *et al.*, does not teach or anticipate AAV virions comprising AAV ITRs flanking packaging sequences comprising the rep gene and sequences comprising chimeric capsid proteins. During *et al.*, fails to teach each and every claim limitation of the instant invention and therefore fails to anticipate the instant invention.

In view thereof, Applicants respectfully request reconsideration and withdrawal of the instant rejection.

Claims 1, 4-18 and 35-50 are rejected under 35 U.S.C. § 102(e) as being anticipated by Gao *et al.*

Applicants respectfully traverse.

As discussed above, Applicants invention is directed in part to a non-naturally occurring nucleic acid comprising: (A) a first nucleotide sequence encoding at least one AAV Rep protein; and (B)a second nucleotide sequence encoding at least one AAV Cap protein, wherein the second nucleotide sequence comprises (i) a polynucleotide encoding a portion of a Cap protein found in an AAV of a first serotype **but not** in an AAV of a second serotype **differing from** the first serotype and (ii) a polynucleotide encoding a portion of a Cap protein found in the AAV of the second serotype, but not in the AAV of the first serotype; wherein the nucleic acid further comprises a first AAV TR and a second AAV TR, and the first and second nucleotide sequences are interposed between the first and the second AAV TRs.

Applicants further teach the construction of chimeric replication-competent (rcAAV) vectors encoding modified Cap proteins, virions containing chimeric rcAAV vectors, virions composed of chimeric capsids (e.g., capsids containing a degenerate, recombined, shuffled or otherwise modified Cap protein), chimeric rcAAV virions having cell- and tissue-specific tropisms, combinatorial vector and virion libraries, and AAV helper vectors encoding chimeric Cap proteins. Combinatorial libraries are generated using degenerate synthetic oligonucleotides that result in the incorporation of every polymorphism within the seven loops of the AAV capsid genes from serotypes 1 through 8. Using a combinatorial library of the invention, virions with cell- and tissue-specific tropisms can be selected.

Gao *et al.*, fails to teach the chimeric capsid proteins of the instant invention. Furthermore, Gao is directed to AAV-9 serotypes and the capsid proteins are AAV-9

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capsid proteins. Gao *et al* do not teach the chimeric capsid proteins of the instant invention, rather the term "chimeric" is applied to the entire virion and rep is fused in frame with a cap. Gao *et al.*, also fails to anticipate each and every claim limitation of the instant invention, i.e., a non-naturally occurring nucleic acid comprising: (A) a **first** nucleotide sequence encoding at least one AAV Rep protein; and (B)a **second** nucleotide sequence encoding at least one AAV Cap protein, wherein the second nucleotide sequence comprises (i) a polynucleotide encoding a **portion** of a **Cap** protein found in an AAV of a **first** serotype **but not** in an AAV of a **second** serotype **differing from** the **first** serotype and (ii) a polynucleotide encoding a **portion** of a Cap protein found in the AAV of the **second serotype, but not** in the AAV of the first serotype; wherein the nucleic acid further comprises a first AAV TR and a second AAV TR, and the first and second nucleotide sequences are interposed between the first and the second AAV TRs.

In view thereof, Applicants respectfully request reconsideration and withdrawal of the instant rejection.

Claims 19-34 and 51-57 are free of the prior art as stated by the Examiner. Claims 2-3 are objected to as being dependent upon a rejected base claim, but will be allowable if rewritten in independent form including all the limitations of the base claim and any intervening claims. In response, Applicants have cancelled claim 1 and rewritten claim 2 to incorporate claim 1.

CONCLUSION

In view of the foregoing, reconsideration and withdrawal of all rejections and allowance of the application with claims 1-34 and 35-57 are respectfully solicited. The amended claims set forth, herein, are merely to expedite prosecution and allowance of the application and is not to be construed as surrender of any subject matter in the instant application. Applicants hereby reserve the right to pursue the subject matter of the canceled claims in one or more continuations, continuation-in-part or divisional patent applications.

If there are any remaining issues or the Examiner believes that a telephone conversation with the Applicants' attorney would be helpful in expediting prosecution of this application, the Examiner is invited to call the undersigned at telephone number shown below.

Although, Applicants believe that no further extensions of time (beyond the one month petition) are required with submission of this paper, Applicants request that this submission also be considered as a petition for any extension of time if necessary. The Commissioner for Patents and Trademarks is hereby authorized to charge the amount due for any retroactive extensions of time and any deficiency in any fees due with the filing of this paper or credit any overpayment in any fees paid on the filing or during prosecution of this application to Deposit Account No. 50-0951.

Respectfully submitted,

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